

Practice: 612 - Tree & Shrub Establishment**Scenario: #1 - Plug Conifers, hand plant****Scenario Description:**

Tree seedlings will be hand planted in the forested area where few or no forest trees are growing, the existing stand of trees needs underplanting, or the previously planted seedling tree stocking level is below desirable conditions. Wildlife habitat is degraded by loss of forest conditions. This resource concern addressed is degraded plant condition -- and inadequate structure and composition, and inadequate wildlife & fish habitat.

Before Situation:

The stocking level of the forest does not meet the minimum recommended number of trees per acre. The existing condition of the forest stand does not meet the landowners objectives. To be a viable forest additional seedlings need planting. Wildlife habitat is rated poor.

After Situation:

The prescribed number of trees are hand planted on 40 acres, and the objectives of the landowner are met. The forest will provide wildlife habitat, provide a long term ground cover, and capture atmospheric carbon.

Scenario Feature Measure: Area Planted**Scenario Unit: Acre****Scenario Typical Size: 40****Scenario Cost: \$5,727.44****Scenario Cost/Unit: \$143.19****Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$19.09	120	\$2,290.80
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$38.32	2	\$76.64
Materials						
Tree, conifer, seedling, containerized, 4 cu. in.	1516	Containerized conifer stock, 4 cubic inches (e.g., "4a" plug), 1.1" x 5.2". Includes materials and shipping only.	Each	\$0.24	14000	\$3,360.00

Practice: 612 - Tree & Shrub Establishment**Scenario: #2 - Bare root conifers, hand plant****Scenario Description:**

This practice involves planting of tree seedlings after the site has been prepared for seedling growth and establishment. The productivity of the site is good and will handle a medium density planting rate. Resource concerns addressed are degraded plant condition -- undesirable plant productivity and health, and inadequate structure and composition and degraded wildlife habitat. Terrain is moderately to steeply sloping, too steep to be planted with a mechanical tree planter so the area is hand planted.

Before Situation:

The land has a little/no tree cover, or is stocked with the wrong tree species. Competing vegetation is a before and after planting concern. Soil condition is degraded due to the loss of the native forest ecosystem (organic matter in top soil depleted). The main resource concerns are degraded plant condition and inadequate structure and composition

After Situation:

40 acres of land is established with permanent tree cover that will improve degraded plant condition, reduce soil erosion, establish wildlife habitat, sequester carbon and reduce invasive species presence. Establishing forest vegetation also creates corridors for wildlife movement.

Scenario Feature Measure: Area of Treatment**Scenario Unit:** Acre**Scenario Typical Size:** 40**Scenario Cost:** \$3,065.64**Scenario Cost/Unit:** \$76.64**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$19.09	100	\$1,909.00
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$38.32	2	\$76.64
Materials						
Tree, conifer, seedling, bare root, 1-0	1512	Bare root conifer trees, 1-0 (1 year old). Includes materials and shipping only.	Each	\$0.06	18000	\$1,080.00

Practice: 612 - Tree & Shrub Establishment**Scenario: #3 - Bare Root Conifers, machine plant****Scenario Description:**

This practice involves planting of tree seedlings after the site has been prepared for seedling growth and establishment. The productivity of the site is good and will handle a medium density planting rate. The resource concerns addressed is degraded plant condition -- undesirable plant productivity and health, and inadequate structure and composition and degraded wildlife habitat. Terrain is moderately sloping and will be planted with a mechanical tree planter. Smaller size seedlings (1-0) are planted.

Before Situation:

The land has a little or no tree cover, or is stocked with the wrong tree species. Competing vegetation is a before and after planting concern. Soil condition is degraded due to the loss of the native forest ecosystem (organic matter in top soil depleted). Native wildlife habitat is lacking. The main resource concern is degraded plant condition and inadequate structure and composition

After Situation:

40 acres of land is established with permanent tree cover that will improve degraded plant condition, reduce soil erosion, establish wildlife habitat, sequester carbon and reduce invasive species presence. Establishing forest vegetation also creates corridors for wildlife movement. Half of planted trees have vexar tubes, or similar, installed to protect from animal damage.

Scenario Feature Measure: Area of Treatment**Scenario Unit:** Acre**Scenario Typical Size:** 40**Scenario Cost:** \$3,169.98**Scenario Cost/Unit:** \$79.25**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$37.24	8	\$297.92
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$23.49	18	\$422.82
Mechanical tree planter	1600	Mechanical tree planter. Requires a pulling unit of either tractor or small dozer depending upon site conditions. Does not include labor.	Hour	\$6.37	18	\$114.66
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$19.09	24	\$458.16
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$23.47	20	\$469.40
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$38.32	4	\$153.28
Materials						
Tree, conifer, seedling, bare root, 1-0	1512	Bare root conifer trees, 1-0 (1 year old). Includes materials and shipping only.	Each	\$0.06	18000	\$1,080.00
Mobilization						
Mobilization, small equipment	1138	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$173.74	1	\$173.74

Practice: 612 - Tree & Shrub Establishment**Scenario: #4 - Hand plant bare root hardwoods, no tubes****Scenario Description:**

Improving the hardwood forest setting by hand planting hardwood tree seedlings. Seedlings are protected from deer browsing. The number of trees to plant is lower than establishing a new forest. Resource concerns are degraded plant condition - undesirable productivity and health, and Inadequate structure and composition; inadequate habitat for fish and wildlife - habitat degradation.

Before Situation:

In an existing upland forest the present trees are poor quality, at low stocking levels, or are undesirable species. Existing conditions do not meet landowner objectives of growing high quality trees. Wildlife habitat is poor due to the above described conditions. Resource concerns are degrade plant condition - undesirable productivity and health, and Inadequate structure and composition; inadequate habitat for fish and wildlife - habitat degradation. Prior to planting any needed vegetation control will be conducted first.

After Situation:

The area of treatment is 10 acres. Bare root hardwood seedlings are planted by hand in the best locations for seedling survival. Post planting vegetation control is planned to ensure seedling survival.

Scenario Feature Measure: Area of Treatment

Scenario Unit: Acre

Scenario Typical Size: 10

Scenario Cost: \$2,280.24

Scenario Cost/Unit: \$228.02

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$19.09	40	\$763.60
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$38.32	2	\$76.64
Materials						
Tree, hardwood, seedling or transplant, bare root, 6-18"	1509	Bare root hardwood trees 6-18" tall. Includes materials and shipping only.	Each	\$0.32	4500	\$1,440.00

Practice: 612 - Tree & Shrub Establishment**Scenario: #5 - Bare Root Hardwood, machine plant, no tubes, 300****Scenario Description:**

This practice involves planting of tree seedlings after the site has been prepared for seedling growth and establishment. The productivity of the site is good and will handle a medium density planting rate. The resource concerns addressed is degraded plant condition -- undesirable plant productivity and health, and inadequate structure and composition and degraded wildlife habitat. Terrain is moderately sloping and will be planted with a mechanical tree planter. Smaller size seedlings (1-0) are planted.

Before Situation:

The land has a little or no tree cover, or is stocked with the wrong tree species. Competing vegetation is a before and after planting concern. Soil condition is degraded due to the loss of the native forest ecosystem (organic matter in top soil depleted). Native wildlife habitat is lacking. The main resource concern is degraded plant condition and inadequate structure and composition

After Situation:

10 acres of land is established with permanent tree cover that will improve degraded plant condition, reduce soil erosion, establish wildlife habitat, sequester carbon and reduce invasive species presence. Establishing forest vegetation also creates corridors for wildlife movement. Half of planted trees have vexar tubes, or similar, installed to protect from animal damage.

Scenario Feature Measure: Area of Treatment**Scenario Unit:** Acre**Scenario Typical Size:** 10**Scenario Cost:** \$2,184.00**Scenario Cost/Unit:** \$218.40**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$37.24	8	\$297.92
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$23.49	6	\$140.94
Mechanical tree planter	1600	Mechanical tree planter. Requires a pulling unit of either tractor or small dozer depending upon site conditions. Does not include labor.	Hour	\$6.37	6	\$38.22
Labor						
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$38.32	4	\$153.28
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$23.47	6	\$140.82
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$19.09	12	\$229.08
Materials						
Tree, hardwood, seedling or transplant, bare root, 6-18"	1509	Bare root hardwood trees 6-18" tall. Includes materials and shipping only.	Each	\$0.32	3000	\$960.00
Mobilization						
Mobilization, Material, distance > 50 miles	1043	Mobilization cost of materials for special cases where the distance from the supplier delivery point to the job site exceeds 50 miles. The costs for shipping by UPS or bulk freight shipping to a location within 50 miles of the job site have already been i	Dollar	\$1.00	50	\$50.00
Mobilization, small equipment	1138	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$173.74	1	\$173.74

Practice: 612 - Tree & Shrub Establishment**Scenario: #6 - Planting Bare Root Shrubs, no tubes****Scenario Description:**

Shrubs are planted to provide a more diverse habitat on 0.5 acre at 5'x10' spacing. Plantings are in either uplands, riparian zones or bottomlands. The site lacks ground level habitat structure and diversity for wildlife. Resource concern is inadequate habitat for fish and wildlife - habitat fragmentation.

Before Situation:

No shrubby vegetation, or very little, is present under the forest overstory. Wildlife species that need shrub cover are not present. An adequate stand of overstory trees is present, but it is a single level, not multi-level.

After Situation:

A 0.5 acre area is planted with shrubs on a 5'x10' spacing. Wildlife habitat fragmentation is reduced. Wildlife food and cover resources are improved.

Scenario Feature Measure: Area of Treatment

Scenario Unit: Acre

Scenario Typical Size: 0

Scenario Cost: \$864.36

Scenario Cost/Unit: #Div/0!

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$37.24	2	\$74.48
Hand tools, tree planting	1590	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	\$11.22	8	\$89.76
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$19.09	16	\$305.44
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$38.32	4	\$153.28
Materials						
Shrub, seedling or transplant, bare root, 6-18"	1506	Bare root hardwood trees 6-18" tall. Includes materials and shipping only.	Each	\$0.44	435	\$191.40
Mobilization						
Mobilization, Material, distance > 50 miles	1043	Mobilization cost of materials for special cases where the distance from the supplier delivery point to the job site exceeds 50 miles. The costs for shipping by UPS or bulk freight shipping to a location within 50 miles of the job site have already been i	Dollar	\$1.00	50	\$50.00

Practice: 612 - Tree & Shrub Establishment**Scenario: #7 - BRHdws w tubes, 110 per acre****Scenario Description:**

This practice involves planting tree seedlings after the site has been prepared for seedling growth and establishment. The productivity of the site is good and will handle a low density planting rate (110 trees/acre). The resource concerns addressed are degraded plant condition - undesirable plant productivity and health and inadequate structure composition and degraded wildlife habitat. Terrain is moderately sloping and will be planted with a machine tree planter. Smaller size seedlings (1-0) are planted.

Before Situation:

The land has little or no tree cover or is stocked with the wrong tree species. Competing vegetation before and after planting is a concern. Native wildlife habitat is lacking.

After Situation:

10 acres of land is established with permanent tree cover that will improve degraded plant condition and establish wildlife habitat, sequester carbon, and reduce invasive species presence. Establishment of forest vegetation also created corridors for wildlife movement.

Scenario Feature Measure: Acres treated

Scenario Unit: Acre

Scenario Typical Size: 10

Scenario Cost: \$5,321.68

Scenario Cost/Unit: \$532.17

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Hand tools, tree planting	1590	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	\$11.22	16	\$179.52
Labor						
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$38.32	4	\$153.28
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$19.09	32	\$610.88
Materials						
Tree shelter, solid tube type, 5" x 48"	1571	5" x 48" tree tube for protection from animal damage. Materials only.	Each	\$2.04	1100	\$2,244.00
Cable ties, plastic	1575	Plastic cable ties (typ. 8-12") to assist in securing items. Materials only.	Each	\$0.05	2200	\$110.00
Tree, hardwood, seedling or transplant, bare root, 6-18"	1509	Bare root hardwood trees 6-18" tall. Includes materials and shipping only.	Each	\$0.32	1100	\$352.00
Stakes, wood, 3/4" x 3/4" x 60"	1583	3/4" x 3/4" x 60" wood stakes to fasten items in place. Includes materials only.	Each	\$1.52	1100	\$1,672.00

Practice: 612 - Tree & Shrub Establishment**Scenario: #8 - BRHdws w tubes, 300 per acre****Scenario Description:**

This practice involves planting tree seedlings after the site has been prepared for seedling growth and establishment. The productivity of the site is good and will handle a low-medium density planting rate (300 trees/acre). The resource concerns addressed are degraded plant condition - undesirable plant productivity and health and inadequate structure composition and degraded wildlife habitat. Terrain is moderately sloping and will be planted with a machine tree planter. Smaller size seedlings (1-0) are planted.

Before Situation:

The land has little or no tree cover or is stocked with the wrong tree species. Competing vegetation before and after planting is a concern. Native wildlife habitat is lacking.

After Situation:

10 acres of land is established with permanent tree cover that will improve degraded plant condition and establish wildlife habitat, sequester carbon, and reduce invasive species presence. Establishment of forest vegetation also created corridors for wildlife movement.

Scenario Feature Measure: Acres treated

Scenario Unit: Acre

Scenario Typical Size: 10

Scenario Cost: \$14,617.76

Scenario Cost/Unit: \$1,461.78

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Hand tools, tree planting	1590	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	\$11.22	48	\$538.56
Labor						
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$38.32	8	\$306.56
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$19.09	96	\$1,832.64
Materials						
Tree, hardwood, seedling or transplant, bare root, 6-18"	1509	Bare root hardwood trees 6-18" tall. Includes materials and shipping only.	Each	\$0.32	3000	\$960.00
Tree shelter, solid tube type, 5" x 48"	1571	5" x 48" tree tube for protection from animal damage. Materials only.	Each	\$2.04	3000	\$6,120.00
Cable ties, plastic	1575	Plastic cable ties (typ. 8-12") to assist in securing items. Materials only.	Each	\$0.05	6000	\$300.00
Stakes, wood, 3/4" x 3/4" x 60"	1583	3/4" x 3/4" x 60" wood stakes to fasten items in place. Includes materials only.	Each	\$1.52	3000	\$4,560.00